

CLAIMS:

1. A mixing system for mixing a plurality of digital audio signals, at least one of which is a noise-shaped oversampled digital audio signal having a predetermined sampling frequency and bit resolution, said system comprising:

- a summing unit having a plurality of input terminals each for receiving a respective one of said plurality of audio signals, for computing a sum signal of said plurality of input signals;
- a clipping unit having an input for receiving said sum signal, said clipping unit clipping said sum signal;
- a filter unit between the input terminals and the clipping unit, arranged to selectively suppress frequency components outside an audio frequency band from the sum signal; and
- a converter unit arranged to receive a clipped sum signal from the clipping unit and to convert said clipped sum signal into an output signal of said bit resolution, using noise-shaping, the clipping unit being arranged to limit the input values to a range of values that the converter is able to handle in a stable manner.

2. A mixing system as claimed in claim 1, characterized in that said filter unit is comprised in an input channel and filters said input signals in order to limit an audio bandwidth of said input signals.

3. A mixing system as claimed in any one of the preceding claims, characterized in that said first and second sampling frequencies are equal in magnitude.

4. A mixing system as claimed in any one of the preceding claims, characterized in that said input signals and/or said output signals are of a DSD-format.

5. A mixing system as claimed in any one of the preceding claims, characterized in that said convertor unit comprises a Sigma-Delta Modulator.

6. A mixing system as claimed in claim 5, characterized in that the clipped signal is maximized to a clip level compliant with said Sigma-Delta Modulator.

7. A mixing system as claimed in claim 6, characterized in that said signal output is maximized to -3dB as compared to the amplitude output of the Sigma-Delta Modulator.

8. A mixing system as claimed in any one of the preceding claims, characterized in that said input channel comprises a down-sampling unit for down-sampling said input signal.

9. A mixing system as claimed in any one of the preceding claims, characterized in that said said convertor unit comprises an up-sampling unit.

10. A mixing system as claimed in any one of the preceding claims, characterized in that the clipping unit is of a soft clipping type.

11. A method of mixing a plurality of noise-shaped oversampled digital audio signals having a predetermined sampling frequency and bit resolution, the method comprising the steps of:

- receiving a respective one of said plurality of audio signals;
- computing a sum signal of said plurality of input signals;
- selectively suppressing frequency components outside an audio frequency band in the input signals and/or the sum signal;
- clipping said sum signal; and
- converting said clipped sum signal into an output signal of said bit resolution, using noise-shaping, the clipping unit being arranged to limit the input values to a range of values that the converter is able to handle in a stable manner.

12. A method as claimed in claim 11, characterized in that the method further comprises the step of limiting an audio bandwidth of said input signals.

13. A method as claimed in claim 11 or 12, characterized in that the steps of filtering frequency components comprised in said mixed signal originating from said bit

resolution and limiting an audio bandwidth of said input signals are combined in a single stage.

14. An audio system comprising a mixing system as claimed in any one of claims
5 1 to 10 for mixing a plurality of noise-shaped oversampled digital audio signals having a predetermined sampling frequency and bit resolution.